METRIC

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SUPERSEDING
PS/1CJ/010
September 1983

MILITARY SPECIFICATION

DIGITAL LANDMASS BLANKING (DLMB) DATA PROGRAM

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification defines the requirements for the Defense Mapping Agency's (DMA) guidelines for the preparation of digital source data for DLMB.

1.2 Purpose. The purpose of this specification is to assure uniformity of treatment among all mapping and charting elements engaged in a coordinated production and maintenance program for this product.

1.3 Security.

1.3.1 Security classification. The security classification of the products generated by the use of these specifications will be the lowest category practicable. When it is necessary to assign a security classification to the product, it shall be in accordance with established national security procedures.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Director, Defense Mapping Agency, ATTN.: PR, A-13, 8613 Lee Highway, Fairfax, VA 22031-2137 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC B6663 **AREA MCGT**

1.3.2 Product classification. The DLMB data generated by the use of these specifications shall be classified according to existing regulations and policies.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the current Department of Defense Index of Specifications and Standards (DODISS) and the supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

MIL-D-89000	DTED Level I
MIL-D-89001	DTED Level II

STANDARDS

MILITARY

MIL-STD-600001	-MC&G Accuracy

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Ave, Philadelphia, PA 19111-5094.)

2.1.2 Other government documents, drawings, and publications. The following other government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

DMA TM 8358.1 - "Datums, Ellipsoids, Grids, and Grid Reference Systems"

DMA TM 8358.2 - "The Universal Grids; UPS and UTM Grids"

(Copies of DMA TM 8358.1 are available, to Department of Defense users, from the Defense Mapping Agency Combat Support Center, ATTN.: PMSR, Washington, DC. 20315-0020. All other requests should be directed to the National Technical Information Center, Cameron Station, Alexandria, VA. 22314-6145).

2.2 Non-government publications. This section is not applicable to this specification.

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related associated detail specifications, specification sheets, or MS standards) the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Source data limits. Digital Landmass Blanking (DLMB) data is arranged into data files of 1 degree by 1 degree geographic areas called cells. The reference origin for each data file is the southwest corner of the cell. All cells with western longitudes (i.e., longitude of reference origin of cell) of 0° and 180° will be named 0°E. and 180°W, respectively. All cells with a southern latitude of 0° (i.e., latitude of reference origin of cell) will be named 0°N. Multiple data files are arranged onto magnetic tape in 1 degree bands of latitude with a maximum of six 1 degree cells of longitude in ascending order (180° west to 179° east). Cells both east and west of 0° and 180° longitudes may be arranged on the same tape.

3.2 Format. DLMB data is a digital product. The format for DLMB is the DMA standard format for Digital Terrain Elevation Data (DTED). DLMB data consist of only two elevation values generally spaced in a 3x3 arc-second interval (see TABLE I, MIL-D-89000, MIL-D-89001): 0 for water and 200 meters (656 feet) for land. 1 X 1 arc-second DLMB data is not available. DLMB data is referenced to the World Geodetic System datum.

3.3 Source material.

3.3.1 Primary sources. The DLMB data is derived from cartographic sources having a preferred scale of 1:250,000 and larger. Joint Operations Graphics (JOG) and nautical charts are primary sources. The lineal data is processed by the E-3A Maritime AWACS Land/Water Data generator which converts this data into a land/water matrix (DLMB) format on World Geodetic System (WGS) datum.

3.3.2 Secondary sources. All primary cartographic sources are checked against the following secondary sources (listed in order of preference) for island portrayal:

a. Nautical Charts (1:250,000 scale)

b. Nautical Charts (smaller in scale than 1:250,000)

c. Joint Operations Graphic-Ground (JOG-G) (1:250,000 scale) for islands not appearing on nautical charts smaller in scale than 1:250,000.

d. Aeronautical Charts - only if nautical charts and topographic maps are not available.

3.3.3 Datums of sources. The datums for all sources used in the production of DLMB are contained in DMA TM 8358.1, Datums, Ellipsoids, Grids and Grid Reference Systems.

3.3.4 Accuracy. Sources selected for compilation of digital data shall have a horizontal accuracy of 518.2 meters (1700 feet) at 90% CE (Circular Error) or better.

3.4 Datum.

3.4.1 Horizontal datum. The horizontal datum for DLMB shall be the current World Geodetic System - 1984 (WGS 84).

3.4.2 Vertical datum. The vertical datum shall be Mean Sea Level.

3.5 DLMB features. There is a physical limitation to the preciseness of digitization of features. At the scale of 1:250,000 this limitation is equal to 0.25 mm (0.01 inch) or 0.04 nautical mile (0.07 kilometer).

3.5.1 Islands.

a. Digitize all islands larger than 0.10 nautical mile (0.18 kilometer). This is equal to 0.76 mm (0.03 inch) at a scale of 1:250,000.

b. If a group of islands exist in a cluster and the islands are less than 0.25 mm (0.01 inch) apart the entire group may be encompassed and digitized as one island.

c. If an island is within 0.25 mm (0.01 inch) of a coastal shoreline the island may be included as part of the shoreline.

d. Rocks are digitized if they are symbolized as islands and meet the size criterion stated for islands. (See 3.5.1.a.)

3.5.2 Shoreline. All coastal shorelines are digitized.

a. River shorelines are digitized as part of a coastal shoreline if the width of the river is greater than 0.25 mm (0.01 inch). Rivers are digitized no more than one nautical mile (1.85 km) from the well defined river mouth. See FIGURE 1.

FIGURE 1

b. Shorelines surrounding bays, fjords, and inlets are digitized when these features have entrances measuring greater than 0.25 mm (0.01 inch).

c. Lakes and ponds are digitized only if they are located less than one nautical mile (1.85 km) upstream from the coastal shoreline and they are attached by a river or inlet whose width measures greater than 0.25 mm (0.01 inch). See FIGURE 2 (A-D).

d. In areas containing glaciers, shorelines are digitized to the outer extremities of the glacier as portrayed on the source sheet.

3.5.3 Other features.

a. Piers, wharves, jetties, and breakwaters are digitized if they are large enough to be portrayed with a double line on a source of 1:250,000 scale. See FIGURE 3.

b. Bridges, oil platforms, and lighthouses are not digitized.

3.6 Output.

3.6.1 Magnetic tape. The final DLMB product is released on a 9 track tape at 1600 BPI.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. "Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and test) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. "All items shall meet all requirements of section 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the

Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of

FIGURE 2

FIGURE 3

known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Final product quality. Final product quality shall reflect the quality elements expressed by each appropriate section within MIL-STD-600001.

5. PACKAGING

This section is not applicable to this specification.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory).

6.1 Intended use. This specification deals with the derivation of Digital Landmass Blanking (DLMB) data in support of the USAF/Boeing E-3A Airborne Warning and Control System (AWACS), and other military and maritime applications. DLMB data is in the form of a Land/Water Matrix which enables the radar to remove all unwanted returns from land allowing for the detection of ship/aircraft movement near the shoreline.

6.2 Acquisition requirement. When this specification is used in acquisition, the applicable issue of DODISS must be cited in the solicitation (see 2.1.1).

6.3 Supersession. This specification supersedes Defense Mapping Agency Product Specifications for Digital Landmass Blanking (DLMB) Data Program, PS/1CJ/010, First Edition, September, 1983.

6.4 Definitions. Circular error - An accuracy figure representing the stated percentage of probability that any point expressed as a function of two linear components (e.g., horizontal position) will be within the given figure.

6.5 International standardization agreements.

This section is not applicable to this specification.

6.5.1 International Standardization Agreements (STANAGS).

This section is not applicable to this specification.

6.5.2 Quadripartite Standardization Agreements (QSTAGs).

This section is not applicable to this specification.

6.5.3 Air Standardization Coordinating Committee Agreements (ASCC AIR STDs/ADV PUBs).

This section is not applicable to this specification.

6.5.4 International MC&G agreements.

This section is not applicable to this specification.

6.5.5 Executive orders.

This section is not applicable to this specification.

6.5.6 Inter-Agency agreements.

This section is not applicable to this specification.

6.5.7 Other documentation.

This section is not applicable to this specification.

6.6 Subject term (key word) listing.

1 x 1 cells

Land /water matrix

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(project MCGT-0064)